REMARKS

Claims 108-119 are currently pending in this application.

Double Patenting

Claims 108-119 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 23-36, 41-51, 57-61 and 64-69 of co-pending Application No. 10/618,635. **Although Applicants do not necessarily agree with the rejection, as neither the present application nor co-pending application no. 10/618,635 stand allowed, Applicants wish the Examiner to hold this rejection in abeyance until one of the two applications is allowed.**

Claims 108-119 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 46-86 of co-pending Application No. 09/791,802. **Although Applicants do not necessarily agree with the rejection, as neither the present application nor co-pending application no. 10/791,802 stand allowed, Applicants wish the Examiner to hold this rejection in abeyance until one of the two applications is allowed.**

Rejection under USC § 112, first paragraph and objection under 35 USC § 132(a)

Claims 108, 113, 114 and 115 stand rejected under 35 USC § 112, first paragraph, as failing to comply with the written description requirement. Further, the Examiner objected to the Amendment filed 10-31-2007 for allegedly introducing new matter. The Examiner's comments have been carefully considered with regard to both the objection and rejection. However, it respectfully submitted that the written description requirement has been met by the specification as originally filed and that no new matter was added in the Amendment filed 10-31-2007.

With respect to claims 108 and 114, and in particular the term "a digital processor configured for a sound masking signal generator", the Examiner is referred to Fig. 2 and Par [0052], in particular the following description:

.....As shown, the master unit 14 comprises a digital signal processing module 50, an audio power amplifier stage 52, an input serial interface 54, an output serial interface 56, and a power supply module 58.

The Examiner is referred to Par [0054], in particular the following description:

As shown in Fig. 2, the digital signal processing module 50 is implemented as a single chip DSP device such as the MC56F801 from the Motorola Corporation. The digital signal processing module 50 comprises a random noise generator module 66, an equalizer module for sound masking 68, an equalizer module for paging 69, a pulse width modulator or PWM stage 70, a switching logic stage 72, and a paging demultiplexer module 74. The digital signal processing module 50 includes a processing unit 76 (i.e. a microprocessor) in addition to on-chip resources such as a memory. The processing unit 76 controls the operation of the modules 66, 68, 69, 70, 72 and 74 to provide the functionality as described in more detail below.

The Examiner is referred to Par [0055], and in particular the following description:

The random noise generator module 66 is the signal source for generating the sound masking signal....

The Examiner is referred to Par [0056], and in particular the following description:

The equalizer module 68 comprises a 1/3 Octave equalizer which is used for adjusting the sound spectrum of the noise signal output to the desired contour..... The output from the equalizer module 68 is a sound masking signal with a controllable contour which is coupled through the PWM module 70 to the amplifier power stage 52.

The Examiner is referred to Par [0057], and in particular the following description:

The PWM module 70 input to the amplifier power stage 52 functions to convert the digitally generated sound masking signal into an analog signal equivalent. It will be appreciated that in this context the output from the PWM module 70 functions under firmware control as a digital-to-analog converter or DAC.

The Examiner is also referred to Par [0058] and Fig. 2, and in particular the following description:

The audio power stage 52 provides an amplified output level for the contoured sound masking signal. The contoured sound masked signal is amplified by the audio power stage 52 and output to the connected speaker 22 which emits a sound masking sound into the physical space..... the

> output level of the audio power stage 52 is controllable by the processing unit 76 through the pulse width modulation of the input signal which is fed to the audio power stage 52.

It is submitted that the aforementioned description in the specification together with the associated drawings provides support for the feature of "a digital processor configured for a sound masking signal generator" as recited in claims 108 and 114. Withdrawal of the Examiner's rejection under35 USC § 112, first paragraph and the objection under 35 USC § 132(a) is respectfully requested.

With respect to claims 108 and 114, and in particular the objection to the language "a communication interface for coupling to said communication network for receiving a plurality of control signals over said communication network including a masking volume signal and a masking frequency signal", the Examiner is first referred to Fig. 2 and Par [0060], in particular the following description:

> ....The communication interface 55 couples the processing unit 76 to the DSP 50 to the network 11 (Fig. 1), and allows the master hub 14 to receive control commands and transmit responses.

The Examiner is again referred to Par [0056], and in particular the following description:

> The equalizer module 68 comprises a 1/3 Octave equalizer which is used for adjusting the sound spectrum of the noise signal output to the desired contour..... The output from the equalizer module 68 is a sound masking signal with a controllable contour which is coupled through the PWM module 70 to the amplifier power stage 52.

The Examiner is also again referred to Par [0057], and in particular the following description:

> The PWM module 70 input to the amplifier power stage 52 functions to convert the digitally generated sound masking signal into an analog signal equivalent. It will be appreciated that in this context the output from the PWM module 70 functions under firmware control as a digital-to-analog converter or DAC.

The Examiner is also again referred to Par [0058] and Fig. 2, and in particular the following description:

> The audio power stage 52 provides an amplified output level for the contoured sound masking signal. The contoured sound masked signal is amplified by the audio power stage 52 and output to the connected speaker 22 which emits a sound masking sound into the physical space..... the output level of the audio power stage 52 is controllable by the processing unit 76 through the pulse width modulation of the input signal which is fed to the audio power stage 52.

The Examiner is also referred to Fig. 1 and Par [0051], and in particular the following description:

> The control unit 12 configures the network 11 by assigning identities or addresses to each of the master hubs 14, 16, 18. The addressing of the individual master hubs 14, 16, 18 enables the control unit 12 to direct commands and/or status requests to individual master sound masking hubs 14, 16, 18 (and indirectly the associated satellite sound masking hubs 20, i.e. via the master hubs 14, 16, 18), or to the entire network 11 as a whole. The control unit 12 is then used to set/adjust the masking signal spectrum, the masking signal volume, and/or the paging volume for the selected (i.e. addressed) master hub 14, 16, 18 and the satellite sound masking hub 20. According to another aspect, the master sound masking hubs 14, 16, 18 includes a digital equalizer for providing greater programming flexibility over the spectrum for the sound masking signal generated by the selected master and satellite sound masking hubs 14, 16 or 18 and 20.....

It is submitted that the aforementioned description in the specification together with the associated drawings provides support for the feature of "a communication interface for coupling to said communication network for receiving a plurality of control signals over said communication network including a masking volume signal and a masking frequency signal" as recited in claims 108 and 114. These sections of the description also provide support for operation of the sound masking units in conjunction with the masking volume signal and the masking frequency signal. It is to be appreciated that the masking frequency is associated with the spectrum of the sound masking signal. Withdrawal of the Examiner's rejection under35 USC § 112, first paragraph, is respectfully requested.

With respect to claims 113 and 115, and in particular the objection to the language "said zones include one or more of a sound masking zone, a non-masking zone, a timer zone, and a keypad zone", the Examiner is first referred to Par [0063], in particular the following description:

> .... For the paging signals/audio data, one or more of the master hubs 14, 16, 18, i.e. belonging to a paging zone, are sent control signals indicating the paging channel 154 form which audio data is to be selected for output on the speakers associated with the selected master sound masking hubs 14, 16, 18 (Fig. 1) and any satellite sound masking hubs 20 (Fig. 1). The addressability of the master sound masking hubs 14, 16, and18 allows paging zones to be defined which provide the capability to send different paging signals to different master hubs 14, 16, 18 and/or different groups of master hubs 14, 16, 18.

As described in the above-noted passage, the addressability function allows selected master hubs to be grouped together into one or more zones. This feature in conjunction with the capability of the control unit to adjust the volume level and/or frequency spectrum of the sound masking signal generated by the master hubs (for example, as described above) provides the capability to define and control one or more sound masking zones. With regard to a non-masking zone, it will be understood that a non-masking zone corresponds to one or more master hubs in which the masking volume has been set to zero or a very low inaudible level. Support for the "timer zone" feature is found at Par [0064] and Par [0070]. Support for the "keypad zone" feature is found at Par [0085], Par [0086] and Par [0087]. It is submitted that the aforementioned description in the specification together with the associated drawings provides support for the masking zone, non-masking zone, timer zone and keypad zone features as recited in claims 113 and 115. Withdrawal of the Examiner's rejection under 35 USC § 112, first paragraph and the Examiner's objection under 35 USC § 132(a) is respectfully requested.

Rejections under 35 USC § 103

Claims 108-119 stand rejected under 35 USC § 103 as being unpatentable over US Patent 6,888,945 to Horrall in view of US Patent No. 5,440,644 to Farinelli, and/or further in view of US Patent No. 4,686,693 to Ritter. The Examiner's comments have been carefully considered; however, the rejection is respectfully traversed for the reasons as discussed below.

The Examiner contends that Horrall teaches a communication network, a plurality of sound masking units, each having a sound masking signal generator, and a control unit configured to generate one or more control signals including said masking volume and said masking frequency signal, as recited in independent claims 108, 114 and 116.

The Examiner relies on Fig. 1 of Horrall, specifically, the cable 18 connecting the control unit 14 to the "Channel A" and "Channel B" speakers 16, as teaching a communication network. At Col. 5, lines 12-14, Horrall describes the connection between the control module 14 and the loudspeakers 16 as follows:

> The control module 14 is connected to A and B channel loudspeakers 16 via telephone-type multi-conductor cables 18.

With all due respect, it is submitted that this is not a communication network and Horrall is limited to teaching a cable connection between the output of the control unit 14 and the speakers 16, which is clearly shown in Fig. 3. This deficiency is further borne out by the fact that the control unit 14 as defined by Horrall is limited to a sound masking signal generator, which according to Horrall is configured to generate a "Channel A" sound masking signal and a "Channel B" sound masking output signal, as shown in Fig. 6 and described at Col. 6, lines 13-67, and not any form of control message, control signal or control command. The speakers 16 as taught by Horrall comprise conventional passive speakers which emit the sound masking signal generated by the control unit 14 (i.e. sound masking signal generator 14) and applied through the cable 18. Horrall does not disclose, teach or suggest a speaker with any form of capability to receive a masking volume control signal or a masking frequency control signal as recited in independent claim 108. The cable connection 18 between the control unit 14 (i.e. sound masking signal generator) is limited to carrying the sound masking signal generated by the control unit 14 which is outputted by the amplifiers 90-A and 90-B (as shown in Fig. 6). Furthermore, if the cable 18 was to carry control signals as alleged by the Examiner, the sound masking functionality of Horrall would be destroyed.

The non-networked configuration of the system disclosed and taught by Horrall is further demonstrated by the arrangement of multiple sound masking systems shown in Fig. 10 and described at Col 8, lines 8-26. While Horrall discloses a multiple sound masking unit configuration, Horrall does not teach or even suggest control of the plurality of sound masking units. Any control function according to Horrall is limited to a manual volume control dial 20 as shown in Fig. 3 and Fig. 6, and described at Col. 1, lines 19-20, Col. 2, lines 36-39, and Col. 8,

lines 37-48. As such, Horrall falls short of disclosing, teaching or suggesting a communication network.

With regard to the control unit 14 taught by Horrall, it appears that the Examiner has characterized the control unit 14 as corresponding to both the "sound masking unit" recited in the second clause of claim 108 and the "control unit" recited in the third clause of claim 108. This characterization gives rise to an inconsistency as the control unit 14 of Horrall cannot function both as a sound masking unit and as a control unit as recited in claim 108.

Furthermore, the control unit 14 disclosed and taught by Horrall does not meet all of the limitations of the sound masking unit and/or the control unit as recited in independent claim 108. For instance, if the control unit 14 according to Horrall is characterized as the sound masking unit of claim 46, then Horrall does not disclose or teach the limitation of a communication interface as recited in the second clause of the claim. Horrall is limited to an output amplifier 90-A (and amplifier 90-B) that is coupled to the cable 18. Furthermore, Horrall does not disclose or even suggest the control unit 14 being responsive to a masking volume signal or a masking frequency signal received over the communication network as also recited in the second clause of claim 108. In fact, Horrall teaches away from such a configuration by disclosing, a manually operated volume control dial 20 (Fig. 3). Furthermore, at Col. 8, line 45 to 48, Horrall states that "The volume levels for the various signals are preferably set at the time of installation of the sound masking systems, in a manner similar to that described above for above-ceiling systems". In view of these differences, it is submitted that the control unit 14 as disclosed by Horrall is not the same as the "sound masking unit" recited in claim 108.

If, on the other hand, the control unit 14 of Horrall is characterized as the control unit defined in claim 108 as alleged at page 6, then the speaker 16 must be the sound masking unit in order to meet the limitations of claim 108. Clearly, the speaker 16 as taught by Horrall is a passive device which does not include a "sound masking generator" as recited in the second clause of claim 108. Notwithstanding this inconsistency, Horrall still does not meet the other limitations recited in claim 108. In particular, the control unit 14 according to Horrall does not include "a communication interface for coupling to the communication network" as

recited in the third clause of claim 108. Horrall is limited to teaching an output amplifier 90-A (and amplifier 90-B) that is coupled to the cable 18, which is not a communication interface. Furthermore, Horrall does not disclose or teach the control unit 14 being "configured to generate the one or more control signals including the masking volume signal and the masking frequency signal" as recited in the third clause of claim 108. At pages 7-8, the Examiner asserts that Farinelli teaches the afore-mentioned deficiencies. Applicants disagree.

The Examiner relies on Farinelli as teaching a speaker system comprising a plurality of speaker units wherein the plurality of speaker units are controlled by control data transmitted to the plurality of speaker units and a control unit configured to generate the control signals to selectively control operation of the plurality of speaker units, and configured to send the control signals over the communication network in order to allow an operator to remotely control the plurality of speaker units. At page 7, the Examiner also characterizes the speaker units taught by Farinelli as sound masking units and maintains that the speaker unit according to Farinelli is the same as a sound masking unit.

The Examiner contends that Farinelli teaches the deficiencies of Horrall with respect to the claimed invention, and that therefore one skilled in the art would have applied these teachings to Horrall. It is respectfully submitted that there is no motivation for one skilled in the art to combine the references for the reasons as discussed below. Secondly, even if one skilled in the art were to combine the teachings of Horrall and Farinelli as suggested by the Examiner, Farinelli does not remedy the deficiencies of Horrall and the resulting system is not the same as that defined by claims 108-119.

Farinelli discloses and teaches an audio distribution system that is configured to collect and distribute intelligible audio signals through a central component (e.g. an audio distribution amplifier 100 in Fig. 1, or a master control unit 1100 in Fig. 11) which is coupled to a plurality of speakers situated throughout a home or house. The speakers according to Farinelli are passive components and cannot generate a sound masking signal. The system according to Farinelli also does not include a sound masking generator component and therefore there is no mechanism for generating a sound masking signal. There is also no teaching by Farinelli to include a sound masking signal as one of the input signals

for distribution by the central component. The speakers as disclosed and taught by Farinelli are limited to receiving and outputting intelligible audio signals, such as telephone speech signals, stereo signals, door bell sounds. In addition, Farinelli does not provide any teaching or suggestion of networking sound masking units and using a controller to control the networked sound masking units.

It is also to be appreciated that audio and music systems, such as taught by Farinelli, and sounds masking systems are fundamentally different systems directed to solve fundamentally different problems. The Farinelli system is concerned with delivering intelligible sounds throughout a house. Sound masking systems, on the other hand, are concerned with suppressing, i.e. masking, unwanted sounds or ambient sounds in a physical space such as an office or workplace. Sound masking systems generate incoherent or unintelligible background sounds that serve to mask the unwanted intelligible sounds in the workplace. Because ambient sounds can vary from location to location in a workplace, the space may be divided into one or more zones, with each zone having a sound masking signal with a different masking level and/or frequency level, wherein the masking level or frequency level is tailored to the ambient sounds sought to be masked or suppressed.

In this regard, the Examiner is also referred US Patent No. 4,185,167 to Cunningham which was cited as prior art in a previous Office Action. At column 1, lines 14 to 23, Cunningham states as follows:

> Such proposals have included ... the use of piped-in or canned music in an attempt to condition the environment to reject the unwanted sounds in the area occupied by the listener. However, music itself played continuously may become distracting to the listener or listeners over an extended period of time, particularly if the music is of a type which the listener may not find pleasing.

Cunningham clearly distinguishes between intelligible sounds, such as music, and unintelligible or incoherent sounds for masking unwanted sounds. Cunningham further emphasizes that intelligible sounds, such as music, are not suitable for sound masking and can disturb occupants over time. Cunningham clearly teaches away from the use of intelligible sounds, e.g. music, in sound masking systems. Farinelli, on the other hand, discloses and teaches a system, i.e. a central component, for the distribution of intelligible sounds, such as, stereo music and

telephone calls, which as taught by Cunningham are not suitable for sound masking. As a result, one skilled in the art would not be led or motivated by the art to combine the teachings of Farinelli with Horrall. Furthermore, Farinelli does not disclose or teach utilizing a sound masking signal as an input to the central component (100 in Fig. 1, or 1100 in Fig. 11), nor does Farinelli disclose or teach controlling a plurality of sound masking units in a network.

It is further submitted that even if one skilled in art were to combine the teachings of Horrall and Farinelli (notwithstanding the lack of any motivation or suggestion in the art) as suggested by the Examiner, Farinelli does not remedy the deficiencies of Horrall. In particular, Farinelli does not disclose or teach a control unit configured to generate a masking volume control signal or a masking frequency control signal. Furthermore Farinelli does not disclose or teach a control unit having a communication interface for coupling to a communication network for transmitting the masking volume control signal and/or the masking frequency control signal. Accordingly, if one skilled in the art were to combine Horrall and Farinelli as suggested by the Examiner, the resulting system would still not include the capability to generate a sound masking volume signal and a sound masking frequency signal, which are transmitted over a network to control the volume and/or frequency of a sound masking signal generated locally at a sound masking unit coupled to the network.

In view of the foregoing, it is submitted that independent claim 108 is not obvious in view of Horrall combined with Farinelli, even assuming arguendo that they could be combined. Since independent claim 114 includes somewhat similar limitations, it is submitted that claim 114 is also not obvious for somewhat similar reasons.

With regard to independent claim 116, the Examiner alleges at page 13 that Horrall teaches a networkable sound masking device comprising a processor configured to receive one or more control signals, the processor configured to generate a sound masking signal and an output stage. The Examiner contends that the controller 14 (Fig. 1) of Horrall corresponds to the processor recited in claim 116. With all due respect, it is submitted that Horrall does not meet the limitations of claim 116. In particular, the controller 14 disclosed by Horrall is not configured or capable of receiving a masking volume control signal and/or a masking

frequency control signal as recited in the second clause of claim 116. In fact, Horrall does not disclose, teach or suggest utilizing a masking volume control signal or a masking frequency control signal. Furthermore, the processor is configured to generate a sound masking signal in response to the masking frequency control signal as recited in the third clause of claim 116. The controller 14 disclosed by Horrall does not include this feature or function and therefore again does not meet the limitations of claim 116.

The Examiner acknowledges that Horrall does not teach an interface for interfacing to a network. The Examiner relies on Farinelli as teaching an interface for interfacing to a network as recited in claim 116. For the reasons as discussed above, it is submitted that one skilled in the art would not be led to combine Farinelli with Horrall, and even if one skilled in the art were to combine the references as suggested by the Examiner (which is not admitted for the reasons set forth above), Farinelli does not remedy the deficiencies of Horrall.

Since Horrall and Farinelli, whether taken alone or in combination, do not disclose or teach all of the limitations as recited in independent claims 108, 114 and 116, it is submitted that the invention as recited is not obvious. Since the remaining claims depend either directly or indirectly from the associated independent claim, it is submitted that the dependent claims are also not obvious for similar reasons.

Further, with regard to dependent claim 119, the Examiner attempt to combine the teachings of USP 4,686,693 to Ritter (Ritter). Applicants respectfully submit that even if the teachings of Ritter could be combined with the teachings of one or more of Farinelli with Horrall, which is not admitted, it would still fail to make up for the deficiencies of claim 116 indicated above.

Conclusion

It is respectfully submitted that the present amendments and remarks represent a complete response to all outstanding issues and that the subject application is in condition for allowance. Favorable consideration is respectfully requested.

If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the telephone number listed below.

Pursuant to 37 C.F.R. 1.17 and 1.136(a), the Applicants respectfully petition for a three (3) month extension of time for filing a response in connection with the present application, and the required small entity fee of $525.00 is attached.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 08-0750 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

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